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APPLICATION
FOR
UNITED STATES LETTERS PATENT

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Be it known that I, James P. Lattari, residing at 134 Fairway Dr., Attleboro, MA
02703 and being a citizen of the United States, have invented a certain new and useful

PROTECTIVE GLOVE WITH IMPROVED COILED WRIST STRAP

of which the following is a specification:

Applicant: James P. Lattari
For: PROTECTIVE GLOVE WITH IMPROVED COILED WRIST STRAP

FIELD OF THE INVENTION

This invention relates to protective gloves.

BACKGROUND OF THE INVENTION

Protective gloves and garments made of metal mesh material are used by butchers and meat packers and also other industries where there is a risk of cuts or punctures or the like.

Since the mesh gloves are inherently flexible but also fairly heavy, they tend to hang from the user's hand and would fall off but for a securing strap. Various types of straps have been developed to secure the glove about the user's wrist and/or forearm.

The prior art, however, discloses a number of often unsuitable straps. For example, U.S. Patent No. 1,250,150 shows a helical coil strap joined to the mesh portion of the glove; U.S. Patent No. 5,088,123 shows the use of a spring as a glove stiffening elements; U.S. Patent No. 4,471,495 shows a cuff enclosing a strap with a fastener; and PCT/EP95/04040 shows the use of a helical spring as a strap inside the cuff portion of the glove. All of these patents are hereby incorporated herein by this reference.

U.S. Patent No. 6,061,833, also incorporated herein by this reference, and by the applicant hereof, discloses an improved strap in the form of a continuous, flat, flexible band inside a cuff formed in the glove providing a more comfortable wrist closure element. The '833 patent notes that the helical spring of the '150 patent can result in an

uncomfortable and gangly appearing glove.

The benefit of a coiled spring type closure element, however, is the low cost and ease of assembly. In this application, those benefits are realized by employing, not a round coiled spring which is uncomfortable and gangly in appearance, but a coiled spring which is much wider than it is thick resulting in improved comfort and a neater finished appearance.

Another problem with the prior art is the difficulty of the user ascertaining the size of the glove. Trying on a number of gloves to find the correct size is inefficient. In this invention, that inefficiency is overcome.

BRIEF SUMMARY OF THE INVENTION

It is therefore an object of this invention to provide a closure element for a glove which need not be coupled or decoupled from about the wearer's wrist.

It is a further object of this invention to provide such a closure element which is more comfortable than prior art helical spring type closure elements.

It is a further object of this invention to provide such a closure element which has a neat and finished appearance.

It is a further object of this invention to provide such a closure element which is infinitely adjustable.

It is a further object of this invention to provide such a closure element which has a longer useful life when compared to many prior art closure elements.

It is a further object of this invention to provide such a closure element which makes it easier for the user to ascertain the correct size of the glove.

The invention results from the realization that a more comfortable and easy to manufacture closure element for a mesh glove which also has a neat and finished appearance is effected by a coiled spring which is much wider than it is thick and which can optionally be color coded to indicate to the user the size of the glove.

5 This invention features a protective glove comprising a glove portion made of mesh material, a wrist portion also made of mesh material, and an elastic element attached to the wrist portion in the form of a coiled spring wider than it is thick to improve comfort.

10 In the preferred embodiment, the coiled spring is at least twice as wide as it is thick and each coil of the coiled spring extends parallel to the glove portion for the width of the coiled spring and then turns perpendicular to the glove portion for the thickness of the coiled spring. Typically, the turns of each coil are rounded.

In one example, there are between 9 and 11 coils per inch, the width of each coil is between .5 and 1 inches, and the thickness of each coil is between .2 and .3 inches.

15 The coiled spring is preferably made of metal and the ends of the coiled spring are welded together. Typically, the coils of the coiled spring extend through the terminal links of the wrist portion of the glove.

20 Also, in an optional embodiment, the coiled spring is color coded wherein different colors indicate different size gloves. Preferably, the coiled spring is color coded with a coating that complies with the FDA's CFR title 21 section 175.300.

In another embodiment, the glove includes a forearm portion and also includes a second elastic element attached thereto in the form of a coiled spring wider than it is thick to improve comfort. Typically, the first coiled spring is attached to the wrist portion on

one end thereof and attached to the forearm portion on the other end thereof.

This invention also features a glove portion made of metal mesh material, a wrist portion also made of metal mesh material, and an elastic element attached to the wrist portion in the form of a coiled spring at least twice as wide as it is thick and wherein each
5 coil extends parallel to the glove portion for the width of the coiled spring and then turns perpendicular to the glove portion in a rounded manner for the thickness of the coiled spring to improve comfort.

One protective glove in accordance with this invention includes a glove portion made of metal mesh material, a wrist portion also made of metal mesh material, and an
10 elastic element attached to the wrist portion in the form of a coiled spring wider than it is thick to improve comfort and color coded to indicate the size of the glove.

Another protective glove in accordance with this invention features a glove portion made of metal mesh material, a wrist portion also made of metal mesh material, a forearm portion, an elastic closure element attached to the wrist portion in the form of a
15 coiled spring wider than it is thick to improve comfort, and another elastic element attached to the distal end of the forearm portion also in the form of a coiled spring wider than it is thick to improve comfort.

Still another protective glove includes a glove portion, a wrist portion, and an elastic closure element for the wrist portion color coded to indicate the size of the glove.
20 Preferably, the elastic closure element is in the form of a coiled spring wider than it is thick to improve comfort.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects, features and advantages will occur to those skilled in the art from the following description of a preferred embodiment and the accompanying drawings, in which:

5 Fig. 1 is a schematic view showing the back of an example of a protective glove in accordance with the subject invention;

 Fig. 2 is a schematic view showing the front of the protective glove shown in Fig. 1;

 Fig. 3 is a schematic view showing the width portion of the coiled spring closure
10 element of Figs. 1-2;

 Fig. 4 is a schematic partial view showing one coil of the coiled spring closure element of Figs. 1-3;

 Fig. 5 is a schematic depiction of another protective glove including a forearm portion in accordance with the subject invention; and

15 Fig. 6 is a schematic view showing a protective glove in accordance with the subject invention where the elastic closure element is color coded to indicate the size of the glove.

DISCLOSURE OF THE PREFERRED EMBODIMENT

20 Aside from the preferred embodiment or embodiments disclosed below, this invention is capable of other embodiments and of being practiced or being carried out in various ways. Thus, it is to be understood that the invention is not limited in its application to the details of construction and the arrangements of components set forth in

the following description or illustrated in the drawings.

In one example, protective glove 10, Figs. 1-2, in accordance with the subject invention, includes glove portion 12 preferably made of stainless steel metal mesh material and wrist portion 14 also preferably made of stainless steel metal mesh material. Elastic element 16 is attached to wrist portion 14 as shown and is in the form of a metal coiled spring wider than it is thick to improve wearer comfort.

Preferably, coiled spring 16 is at least twice as wide as it is thick (e.g., between .5 and 1 inches wide and between .2 and .3 inches thick). In the preferred embodiment, there are between 9 and 11 coils per inch and angle α , Fig. 4 is between 8.0 and 9.0 degrees. In one example, the spring was .71 inches wide, .23 inches thick, and α was 8.5°. Also, for better comfort, it is preferred that the turns of each coil 18 are rounded as shown in Fig. 3. The ends of coiled spring 16 are typically welded to together as shown at 20, in Fig. 2 after manually spiraling the spring closure element through the terminal links or rings 22 of metal mesh wrist portion 14 (see also Fig. 4).

As shown in Fig. 4, each coil 18 extends parallel to the glove portion which is the plane defined by the page of Fig. 4. Thus, the width of the coiled spring closure element is parallel to the glove. Each coil 18 then turns in a rounded manner perpendicular to the plane of the glove defining the thickness of the coiled spring closure element.

Fig. 5 shows glove 10' with glove portion 12, wrist portion 14, first coiled spring element 16a, forearm portion 30, and second coiled spring element 16b. Typically, coiled spring 16b has the same configuration as coiled spring 16a: that is, coiled spring closure element 16b is much wider than it is thick. Coiled spring closure element 16a, on one end, is attached to the rings of wrist portion 14 and, on the other end, is attached to

the rings of forearm portion 30. Alternatively, a bangle type mechanism could be used in place of second coiled spring element 16b.

In the preferred embodiment, coiled spring closure element 16', Fig. 6 (or coiled springs 16a and/or 16b, Fig. 5) are color coded using a coating that complies with FDA regulation 21 CFR §175.300. In one example, yellow is used to denote an extra-extra-small glove, grey denotes an extra small glove, white denotes a small glove, red denotes a medium size glove, blue denotes a large glove, green denotes an extra large glove, and black denotes an extra-extra-large glove. Colors could also be used to denote the type of glove (full or thumb and two finger type gloves) and/or left or right hand gloves.

The result is an improved closure element for a mesh glove which does not need to be adjusted prior to use, which does not need to be coupled or decoupled from about the wearer's wrist, which is more comfortable than prior art helical spring type closure elements, which is neat and finished in appearance, which is infinitely adjustable, and which has a long useful life. When the closure element is color coded as set forth above, users can readily determine the correct size and/or type glove for their needs.

Although specific features of the invention are shown in some drawings and not in others, this is for convenience only as each feature may be combined with any or all of the other features in accordance with the invention. For example, the innovations disclosed in the '123 and '833 patents may be incorporated in the gloves of the subject disclosure. The words "including", "comprising", "having", and "with" as used herein are to be interpreted broadly and comprehensively and are not limited to any physical interconnection. Moreover, any embodiments disclosed in the subject application are not to be taken as the only possible embodiments. For example, gloves with only a thumb

and no fingers and gloves with a thumb and only one or two fingers are also possible embodiments.

Other embodiments will occur to those skilled in the art and are within the following claims:

5 What is claimed is: